

## APPENDIX A ACTION PLAN

000367

Calumet Container Company  
3136 State Line Road  
Hammond, Indiana

## I. SUMMARY, HISTORY, AND GENERAL INFORMATION:

Calumet Container Company, a division of Steel Container Corporation is a drum reconditioning operation that began in the 1960's and terminated with a fire on April 21, 1982. During its operational lifetime, Calumet Container recycled metal containers ranging in size from 55 gallon drums to 5 gallon pails along with various size fibre drums. The company property is located on both Indiana and Illinois land and is approximately 100 yards from a Wolf Lake channel extension and approximately 50 yards from Powerhorn Lake.

Since 1978 the Hammond Air Pollution Control department has been involved in litigation against Calumet Container in regard to groundwater contamination and the subsequent threat to Wolf Lake. A groundwater evaluation completed by Soil Testing Service in 1980 for the Illinois Attorney General's Office revealed the presence of Xylene, Toluene and Penolics, Cyanide and Manganese in both on and off site groundwater samples. The groundwater flow was determined to be in the direction of Wolf and Powerhorn Lakes. In conclusion, the report noted that the existing contaminants pose a threat to both Illinois and Indiana groundwater (See attached Soil Testing Services report).

After the fire of April 21, the U.S. EPA responded to a request from the City of Hammond, the State of Indiana, and the State of Illinois to undertake clean-up of the facility if and when the owner of the facility proved incapable of effective clean-up action. The owner, John Jagiella, filed for bankruptcy as a result of the fire which totally destroyed the plant building.

Initial investigation of the site by the Technical Assistance Team resulted the sampling of a sludge tank and two tank trailers on site. Also, a site survey disclosed the presence of 69 trailers on site. The majority of the trailers were being used as storage for empty metal drums and fiber drums, however, several trailers contained full or partially full drums of liquids, solids, and sludges. Aeromatic hydrocarbons, xylene, adhesives waste oil and lime were identified. (See Attached Report).

With George Hadley as OSC, the EPA undertook the clean-up of clean-up operations. Beginning on Thursday, April 29, 1982 all scrap metal (from destroyed building) and empty containers were inspected for hazardous materials before being allowed to leave the site.

On May 10, 1982, Chemical Waste Management, ENRAC Division, was contracted under CERCLA to immediately perform emergency clean-up of liquids, solids and sludges found in the sludge pit, chemical waste trap, septic tank and various process tanks in the plant. Also several drums were to be vacuumed out.

On May 21, 1982, emergency action was completed and a total of approximately 5500 gallons of liquid and 30 cubic yards of sludge was removed to CID for disposal (See attached CERCLA summaries). With the conclusion of this action, further action on Calumet Container was referred for the remedial section for appropriate response.

## II. SITE STATUS

### a). Security

- The Calumet Container site has not been fenced although warning signs have been placed on City of Hammond property along State Line Road. The City of Hammond has proposed that a fence be installed.
- The facility is not monitored and there is evidence of recent theft of plant equipment and empty drums.

### b). On-Going Activities

- Since the completion of the emergency CERCLA clean-up, the owner has continued demolition and haul of the building, and removal of empty container.
- The Indiana State Board of Health has required that all waste material be removed from the site within 90 days of the date of fire.
- The Illinois EPA has filed suit against the facility for contamination of groundwater.

### c). Current Information On Extent of Contamination

#### Air

- No information is available.

Surface Water

- Runoff collected after the fire indicated relatively high concentrations of: dichloromethane (85.3 ppb), dichloroethene (13.0 ppb), trichloroethane (24.9 ppb), trichloroethene (27.3 ppb), methylebenzene (109.6 ppb), chlorobenzene (28.0 ppb) and dimethylbenzene (84.3 ppb).

Groundwater

- See Soil Testing Services report dated October 18, 1980.

Other

- Chemical residue patches were noticed on the ground throughout the site.
- Approximately 55 gallons of tar were noted on the ground east of the office trailer.

d). Current Information on Human Health/Environment Impacts

- No information is available.

Site Safety Plan

- A site safety plan was prepared and is attached to TDD 5-8204-11.

Health Effects

- No information is available.

### III. RECOMMENDED ACTIONS

a). Security

- Install a snow fence around perimeter of the site to prevent unauthorized access.

b). Extent of Contamination Studies

Air

- Not warrented at this time.

Surface Water

- A sampling system should be established to determine extent of contamination of surface waters.

Soils

- Sufficient information is available at this time.

Groundwater

0003 '0

- Sufficient information is available at this time.

c). Human Health/Environmental Impact

- Strict compliance with the site safety plan is required by all personnel conducting clean-up operation on site due to presence of hazardous material.

Epidemological Studies

- Not warranted at this time.

Damage Assessment

- Not warranted at this time.

d). Mitigative Techniques

Feasible Objectives

- Remove and dispose of all metal including drums, trailers, and roofing materials that does not contain liquid and/or solid waste.
- Test compatability of all material in drums and label drums.
- Bulk and dispose all liquids, solids, and sludges.
- Conduct a survey of the facility to locate buried containers.
- Remove contaminated soil and buried containers.

Removal of Non-Contaminated Material

Equipment/Personnel	Days	Total
Frontend Loaders (2)/6 yards	20	\$22,560.00
Crane (1)	20	16,000.00
16 yd. <sup>3</sup> Open Top Tandems (2)	20	12,160.00
Metal Cutting Equipment (2)	20	2,000.00
Frontend Loaders with Fork -Lift Attachment (1)	20	5,680.00
Supervisor (1)	20	5,920.00
Heavy Equipment Operators (4)	20	16,000.00
Technicians (5)	20	13,200.00
Skilled Tradesmen (2)	20	9,280.00
Truck Drivers (2)	20	5,440.00
Safety Equipment	20	18,000.00
Overpacks (50)		3,250.00
Pallets (100) and Banding		3,300.00
		<u>\$132,790.00</u>

Compatibility Testing

Chemists (2)	5	4,140.00
Technicians (4)	5	2,640.00
Safety Equipment (6)	5	2,250.00
Sampling Equipment (250 drums)		1,250.00
Laboratory Analytical Testing		6,250.00
		<u>\$16,530.00</u>

Bulking and Disposal

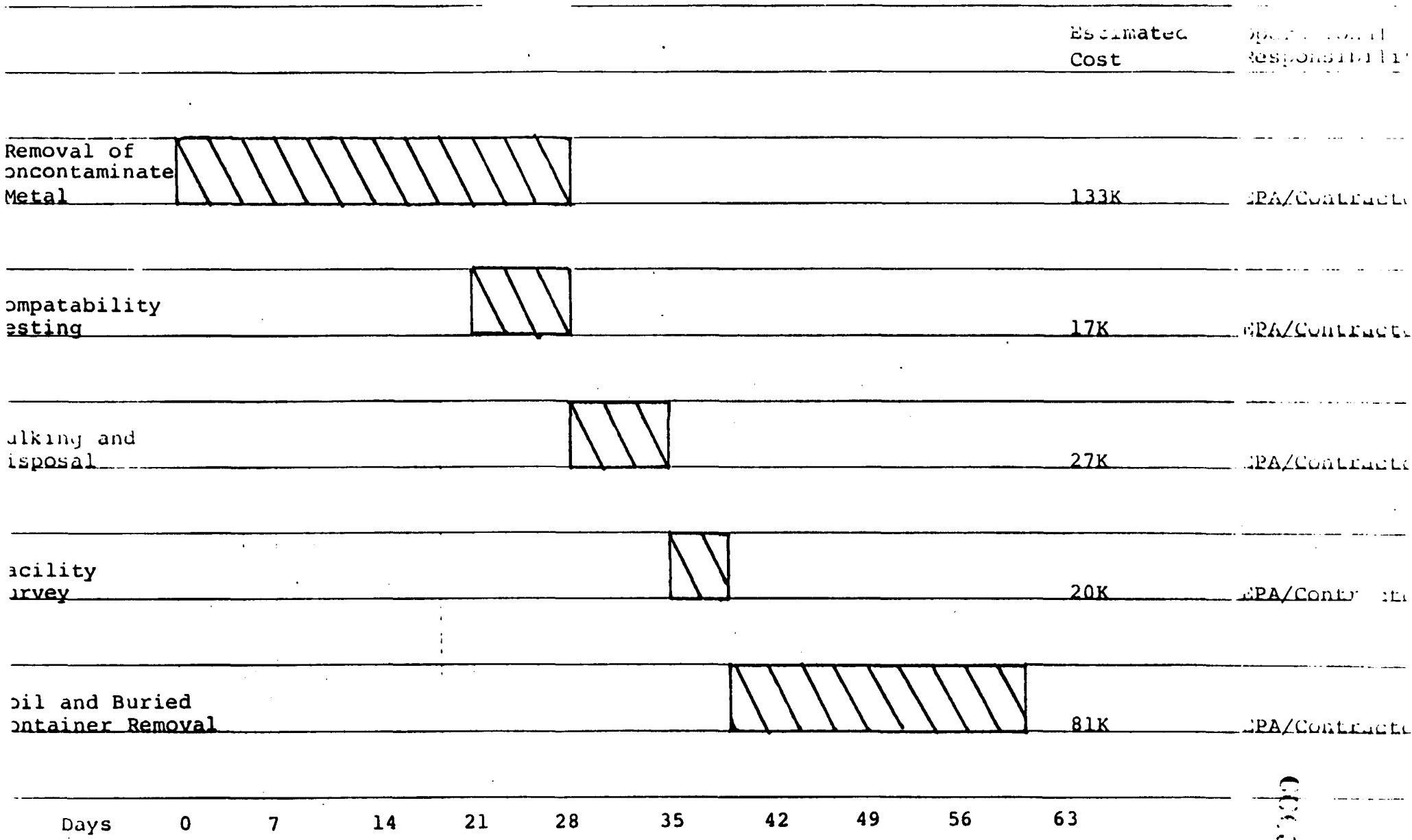
12 yd. <sup>3</sup> sludge boxes (3)	5	1,800.00
Flatbed, Tandem Axle (1)	5	1,040.00
Tanker Trailers (3) (6,000 gallons)	5	4,275.00
Tractor Rigs with Pump (4)	5	5,000.00
Drum lift attachment (1)	5	250.00
D-3 Wide Track Dozer (1)	5	1,600.00
Drivers (4)	5	2,720.00
Heavy Equipment Operator (1)	5	1,000.00
Foreman (1)	5	920.00
Technicians (4)		2,640.00
Disposal (1,000 gallon/100 yd <sup>3</sup> )	5	5,500.00
		<u>\$26,745.00</u>

Removal of Soil and Buried Containers

000372

Equipment/Personnel	Days	Total
Frontend Loaders (2) (6 yds. <sup>3</sup> CAT 988)	15	\$16,980.00
16 yds. <sup>3</sup> Tandems (4)	15	18,240.00
Tractors (4)	15	12,000.00
Heavy Equipment Operator (2)	15	6,000.00
Truck Drivers (4)	15	8,160.00
Foreman (1)	15	2,760.00
Disposal Cost (1,000 yds. <sup>3</sup> )	15	17,000.00
		<u>\$81,140.00</u>

ACTION PLAN  
 Container Company  
 Hammond, Indiana



000073

# SPECIAL WASTE ANALYSIS REPORT

DATE: 1/10/80

DATE

TIME

WASTE ANALYSIS

000374

PROFILES OF WASTE ON \_\_\_\_\_ REPRESENTATIVE SAMPLE RECEIVED ON \_\_\_\_\_

IDENTIFICATION OF SAMPLE RECEIVED: \_\_\_\_\_ SAMPLE TAKEN: \_\_\_\_\_

PROPOSED TREATMENT/DISPOSAL FACILITY: \_\_\_\_\_

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (\*).

DATE OF ANALYSIS: \_\_\_\_\_ LAB MANAGER: \_\_\_\_\_

*South Solid - Consumer Container*

Test	As Received	IEPA Leachate	Analyst Initials	Test	As Received	Leachate	Analyst Initials
Specific Gravity							
pH <i>10% SOLUTION</i>	<i>8.6</i>						
Acidity, % as							
Alkalinity, % as				Phenols, mg/l	<i>&lt;5.0</i>		
COD, mg/l				Cyanides, as CN, Total, mg/l	<i>&lt;10.0</i>		
BOD, mg/l				Cyanides, as CN, Free, mg/l			
Total Solids @ 105°C	<i>86.45%</i>						
Total Dissolved Solids, mg/l				Nitrogen, Ammonia, as N, mg/l			
Total Suspended Solids, mg/l				Nitrogen, Organic, as N, mg/l			
Residue on Evaporation @ 50°C				Total Kjeldahl Nitrogen, as N, mg/l			
Flash Point, F°	<i>2212</i>			Total Alkalinity (P), as CaCO <sub>3</sub> , mg/l			
Ash Content, on ignition				Total Alkalinity (M), as CaCO <sub>3</sub> , mg/l			
Heating Value, BTU/lb				Total Hardness, as CaCO <sub>3</sub> , mg/l			
"Acid Scrub," gNaOH/g				Calcium Hardness, as CaCO <sub>3</sub> , mg/l			
				Magnesium Hardness, as CaCO <sub>3</sub> , mg/l			
Arsenic, as AS, mg/l	<i>21.9</i>	<i>&lt;0.01</i>					
Barium, as Ba, mg/l	<i>920.</i>						
Boron, as B, mg/l				Oil and Grease, mg/l			
Cadmium, as Cd, mg/l	<i>33.3</i>	<i>&lt;0.05</i>					
Chromium Total as Cr, mg/l	<i>1380.</i>	<i>16.1</i>					
Hexavalent Chromium @ Cr, mg/l				Aldrin, mg/l			
Copper, as Cu, mg/l	<i>299.</i>			Chlordane, mg/l			
Iron, Total as Fe, mg/l				DDT's, mg/l			
Iron, dissolved, as Fe, mg/l				Dieldrin, mg/l			
Lead as Pb, mg/l	<i>2930.</i>	<i>0.25</i>		Endrin, mg/l			
Manganese, as Mn, mg/l				Heptachlor, mg/l			
Magnesium, as Mg, mg/l				Lindane, mg/l			
Mercury, as Hg, mg/l	<i>10.6</i>			Methoxychlor, mg/l			
Nickel as Ni, mg/l	<i>36.6</i>			Toxaphene, mg/l			
Selenium as Se, mg/l	<i>9.41</i>			Parathion, mg/l			
Silver, as Ag, mg/l	<i>1.80</i>			2, 4, D, mg/l			
Zinc as Zn, mg/l	<i>3350.</i>	<i>3.05</i>		2, 4, 5, TP (Silvex), mg/l			
				PCB's, mg/l	<i>&lt;5.0</i>		
Bicarbonates, as HCO <sub>3</sub> , mg/l							
Carbonates as CO <sub>3</sub> , mg/l							
Chlorides, as Cl, mg/l							
Fluorides, as F, mg/l							
Nitrate as NO <sub>3</sub> , mg/l							
Nitrite as NO <sub>2</sub> , mg/l							
Phosphate, as P, mg/l							
Sulfate as SO <sub>4</sub> , mg/l							
Sulfides as S, mg/l	<i>&lt;2.0</i>						



## SPECIMEN WASTE ANALYSIS REPORT

DATE RECEIVED

FROM LABORATORY RECEIVED ON REPRESENTATIVE SAMPLE RECEIVED ON

ANALYST SAMPLE RECEIVED SAMPLE TAKEN

0002

PROPOSED TREATMENT/DISPOSAL FACILITY:

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (\*).

DATE OF ANALYSIS: LAB MANAGER:

D1 - Collected Contaminants

Test	As Received	Leachate	Analyst Initials	Test	As Received	Leachate	Analyst Initials
Specific Gravity							
pH	13.2						
Acidity, % as							
Alkalinity, % as <i>NACH</i>	1.5			Phenols, mg/l	<5.0		
COD, mg/l				Cyanides, as CN, Total, mg/l	<10.0		
BOD <sub>5</sub> , mg/l				Cyanides, as CN, Free, mg/l			
Total Solids @ 105°C	2.63%						
Total Dissolved Solids, mg/l				Nitrogen, Ammonia, as N, mg/l			
Total Suspended Solids, mg/l				Nitrogen, Organic, as N, mg/l			
Residue on Evaporation @ 180°C				Total Kjeldahl Nitrogen, as N, mg/l			
Flash Point, F°	>212			Total Alkalinity (P), as CaCO <sub>3</sub> , mg/l			
Ash Content, on ignition				Total Alkalinity (M), as CaCO <sub>3</sub> , mg/l			
Heating Value, BTU/lb				Total Hardness, as CaCO <sub>3</sub> , mg/l			
"Acid Scrub," gNaOH/g				Calcium Hardness, as CaCO <sub>3</sub> , mg/l			
				Magnesium Hardness, as CaCO <sub>3</sub> , mg/l			
Arsenic, as AS, mg/l	5.36						
Barium, as Ba, mg/l	136						
Boron, as B, mg/l				Oil and Grease, mg/l			
Cadmium, as Cd, mg/l	6.78						
Chromium, Total as Cr, mg/l	147						
Soluble Chromium @ Cr, mg/l				Aldrin, mg/l			
Copper, as Cu, mg/l	111			Chlordane, mg/l			
Iron, Total as Fe, mg/l				DDT's, mg/l			
Iron, dissolved, as Fe, mg/l				Dieldrin, mg/l			
Lead, as Pb, mg/l	339			Endrin, mg/l			
Manganese, as Mn, mg/l				Heptachlor, mg/l			
Magnesium, as Mg, mg/l				Lindane, mg/l			
Mercury, as Hg, mg/l	2.46			Methoxychlor, mg/l			
Nickel, as Ni, mg/l	2.88			Toxaphene, mg/l			
Selenium, as Se, mg/l	<0.50			Parathion, mg/l			
Silver, as Ag, mg/l	<0.30			2, 4, D, mg/l			
Zinc, as Zn, mg/l	373			2, 4, 5, TP (Silver), mg/l			
				PCB's, mg/l	<5.0		
Bicarbonates as HCO <sub>3</sub> , mg/l							
Carbonates as CO <sub>3</sub> , mg/l							
Chlorides, as Cl, mg/l							
Fluorides, as F, mg/l							
Nitrate as NO <sub>3</sub> , mg/l							
Nitrite as NO <sub>2</sub> , mg/l							
Phosphate, as P, mg/l							
Sulfate, as SO <sub>4</sub> , mg/l							
Sulfides, as S, mg/l <i>Trace</i>	<2.0						

# SPECIAL WASTE ANALYSIS REPORT

LABORATORY:

DATE

CODE

WASTE PROFILE SHEET

2123

PROFILE SHEET RECEIVED ON: REPRESENTATIVE SAMPLE RECEIVED ON:

000377

CERTIFICATE OF REP. SAMPLE RECEIVED: DATE TAKEN:

PROPOSED TREATMENT/DISPOSAL FACILITY:

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (\*).

DATE OF ANALYSIS: LAB MANAGER:

T-3 - Calumet Containers

Test	As Received	Leachate	Analyst Initials	Test	As Received	Leachate	Analyst Initials
Specific Gravity							
pH	12.0						
Acidity, % as							
Alkalinity, % as <i>NaHCO<sub>3</sub></i>	1.1			Phenols, mg/l	<5.0		
BOD, mg/l				Cyanides, as CN, Total, mg/l	<10.0		
BOD <sub>5</sub> , mg/l				Cyanides, as CN, Free, mg/l			
Total Solids @ 105°C	39.34%						
Total Dissolved Solids, mg/l				Nitrogen, Ammonia, as N, mg/l			
Total Suspended Solids, mg/l				Nitrogen, Organic, as N, mg/l			
Residue on Evaporation @ 130°C				Total Kjeldahl Nitrogen, as N, mg/l			
Flash Point, F°	2212			Total Alkalinity (P), as CaCO <sub>3</sub> , mg/l			
Ash Content, on ignition				Total Alkalinity (M), as CaCO <sub>3</sub> , mg/l			
Heating Value, BTU/lb				Total Hardness, as CaCO <sub>3</sub> , mg/l			
"Acid Scrub," gNaOH/g				Calcium Hardness, as CaCO <sub>3</sub> , mg/l			
				Magnesium Hardness, as CaCO <sub>3</sub> , mg/l			
Arsenic, as AS, mg/l	2.29						
Barium, as Ba, mg/l	49.4						
Boron, as B, mg/l				Oil and Grease, mg/l			
Cadmium, as Cd, mg/l	3.96						
Chromium, Total as Cr, mg/l	24.7						
Sixivalent Chromium @ Cr, mg/l				Aldrin, mg/l			
Copper, as Cu, mg/l	62.9			Chlordane, mg/l			
Iron, Total as Fe, mg/l				DDT's, mg/l			
Iron, dissolved, as Fe, mg/l				Dieldrin, mg/l			
Lead, as Pb, mg/l	91.9			Endrin, mg/l			
Manganese, as Mn, mg/l				Heptachlor, mg/l			
Magnesium, as Mg, mg/l				Lindane, mg/l			
Mercury, as Hg, mg/l	0.72			Methoxychlor, mg/l			
Nickel, as Ni, mg/l	8.00			Toxaphene, mg/l			
Selenium, as Se, mg/l	1.99			Parathion, mg/l			
Silver, as Ag, mg/l	0.27			2, 4, D, mg/l			
Zinc, as Zn, mg/l	119.			2, 4, 5, TP (Silvex), mg/l			
				PCB's, mg/l	<5.0		
Bicarbonates, as HCO <sub>3</sub> , mg/l							
Carbonates, as CO <sub>3</sub> , mg/l							
Chlorides, as Cl, mg/l							
Fluorides, as F, mg/l							
Nitrate, as NO <sub>3</sub> , mg/l							
Nitrite, as NO <sub>2</sub> , mg/l							
Phosphate, as P, mg/l							
Sulfate, as SO <sub>4</sub> , mg/l							
Sulfides, as S, mg/l <i>measured</i>	<2.0						

# SPECIAL WASTE ANALYSIS REPORT

ENR 12

21

LABORATORY

WASTE ANALYSIS REPORT

DATE RECEIVED ON

ANALYTICAL SAMPLE RECEIVED ON

000377

CERTIFICATE OF REP. SAMPLE RECEIVED

SAMPLE TAKEN

PROPOSED TREATMENT/DISPOSAL FACILITY:

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK ( \* ).

DATE OF ANALYSIS:

LAB MANAGER:

T-1 - Column Containment

Test	As Received	Leachate	Analyst Initials	Test	As Received	Leachate	Analyst Initials
Specific Gravity							
pH	9.0						
Acidity, % as							
Alkalinity, % as <i>HACN</i>	0.1			Phenols, mg/l	45.0		
CO <sub>2</sub> , mg/l				Cyanides, as CN, Total, mg/l	10.0		
BOD <sub>5</sub> , mg/l				Cyanides, as CN, Free, mg/l			
Total Solids @ 105°C	0.72%						
Total Dissolved Solids, mg/l				Nitrogen, Ammonia, as N, mg/l			
Total Suspended Solids, mg/l				Nitrogen, Organic, as N, mg/l			
Residue on Evaporation @ 180°C				Total Kjeldahl Nitrogen, as N, mg/l			
Flash Point, F°	2212			Total Alkalinity (P), as CaCO <sub>3</sub> , mg/l			
As Received				Total Alkalinity (M), as CaCO <sub>3</sub> , mg/l			
				Total Hardness, as CaCO <sub>3</sub> , mg/l			
				Calcium Hardness, as CaCO <sub>3</sub> , mg/l			
				Magnesium Hardness, as CaCO <sub>3</sub> , mg/l			
	0.86						
	18.5						
Boron, as B, mg/l				Oil and Grease, mg/l			
Cadmium, as Cd, mg/l	0.94						
Chromium Total as Cr, mg/l	16.4						
Hexavalent Chromium @ Cr, mg/l				Aldrin, mg/l			
Copper, as Cu, mg/l	9.46			Chlordane, mg/l			
Iron, Total as Fe, mg/l				DDT's, mg/l			
Iron, dissolved, as Fe, mg/l				Dieldrin, mg/l			
Lead, as Pb, mg/l	32.6			Endrin, mg/l			
Manganese, as Mn, mg/l				Heptachlor, mg/l			
Magnesium, as Mg, mg/l				Lindane, mg/l			
Mercury, as Hg, mg/l	0.56			Methoxychlor, mg/l			
Nickel, as Ni, mg/l	40.20			Toxaphene, mg/l			
Selenium, as Se, mg/l	0.15			Parathion, mg/l			
Silver, as Ag, mg/l	40.06			2, 4, D, mg/l			
Zinc, as Zn, mg/l	59.9			2, 4, 5, TP (Silvex), mg/l			
				PCB's, mg/l	5.0		
Bicarbonates, as HCO <sub>3</sub> , mg/l							
Carbonates, as CO <sub>3</sub> , mg/l							
Chlorides as Cl, mg/l							
Fluorides as F, mg/l							
Nitrate, as NO <sub>3</sub> , mg/l							
Nitrite, as NO <sub>2</sub> , mg/l							
Phosphate, as P, mg/l							
Sulfate, as SO <sub>4</sub> , mg/l							
Sulfides as S, mg/l	2.0						

# SPECIAL WASTE ANALYSIS REPORT

LABORATORY:

ANALYST RECEIVED ON: REFERENCE SAMPLE RECEIVED **000378**

PROPOSED TREATMENT/DISPOSAL FACILITY:

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK (\*).

DATE OF ANALYSIS: LAB MANAGER:

*T-2 Calumet Containers*

Test	As Received	Leachate	Analyst Initials	Test	As Received	Leachate	Analyst Initials
Sc							
pH	13.1						
Acid							
Alkalinity, %	1.1			Phenols, mg/l	< 5.0		
COD, mg/l				Cyanides, as CN, Total, mg/l	< 10.0		
BOD, mg/l				Cyanides, as CN, Free, mg/l			
Total Solids @ 5°C	3.30%			Nitrogen, Ammonia, as N, mg/l			
Total Dissolved Solids, mg/l				Nitrogen, Organic, as N, mg/l			
Total Suspended Solids, mg/l				Total Kjeldahl Nitrogen, as N, mg/l			
Residue on Evaporation @ 180°C							
Flash Point, F°	> 212			Total Alkalinity (P), as CaCO <sub>3</sub> , mg/l			
Ash Content, %				Total Alkalinity (M), as CaCO <sub>3</sub> , mg/l			
Heat of Combustion, Btu/lb				Total Hardness, as CaCO <sub>3</sub> , mg/l			
Acid Value, OH/g				Calcium Hardness, as CaCO <sub>3</sub> , mg/l			
				Magnesium Hardness, as CaCO <sub>3</sub> , mg/l			
	4.53						
Barium, as Ba, mg/l	6.43						
Boron, as B, mg/l				Oil and Grease, mg/l			
Calcium, mg/l	0.67						
Chromium, as Cr, mg/l	19.6						
Chromium @ Cr, mg/l				Aldrin, mg/l			
	14.2			Chlordane, mg/l			
				DDT's, mg/l			
				Dieldrin, mg/l			
Iron, as Fe, mg/l				Endrin, mg/l			
Lead, as Pb, mg/l	27.7			Heptachlor, mg/l			
Manganese, as Mn, mg/l				Lindane, mg/l			
Magnesium, as Mg, mg/l				Methoxychlor, mg/l			
Mercury, as Hg, mg/l	1.21			Toxaphene, mg/l			
Nickel, as Ni, mg/l	2.42			Parathion, mg/l			
Selenium, as Se, mg/l	1.47			2, 4, D, mg/l			
Silver, as Ag, mg/l	40.06			2, 4, 5, TP (Silvex), mg/l			
Zinc, as Zn, mg/l	72.1			PCB's, mg/l	< 5.0		
Bicarbonates, as HCO <sub>3</sub> , mg/l							
Carbonates, as CO <sub>3</sub> , mg/l							
Chlorides, as Cl, mg/l							
Fluorides, as F, mg/l							
Nitrate, as NO <sub>3</sub> , mg/l							
Nitrite, as NO <sub>2</sub> , mg/l							
Phosphate, as P, mg/l							
Sulfate, as SO <sub>4</sub> , mg/l							
Sulfides, as S, mg/l	< 2.0						